REMARKS

Reconsideration and allowance of the above referenced application are respectfully requested.

The objection to claim 1 has been obviated herein by amendment.

Claims 1-3 and 5-22 stand rejected under 35 USC 102b as allegedly been anticipated by Quaas. This contention is respectfully traversed, and it is respectfully suggested that the rejection does not meet the patent office's burden of providing a prima facie showing of unpatentability.

Specifically, the Quaas reference shows a system which uses sound converters 4 and 5 and connections between the converters. The sound converters are used as a physical pendulum see column 4 lines 64-65. Note, however, that the rod 20-21 is not used for tensioning, but rather is used for connecting together the sound converters. See generally column 5 lines 13-27. The rod simply connects together these sound converters 4 and 5. In the other embodiments such as described column 5 lines 28-36, and other places, similar disclosure is given: specifically, the connection merely connects together the sound converters and does not tension then.

The reason for this is based on Quaas's technique. The

pendulum formed by the sound converters 4 and 5 is used to change the sound characteristics. By connecting together the two sound converters 4 and 5, the two sound converters become coupled and act as one. Quaas just couples together the two sound converters. There is nothing in Quaas which teaches or suggests "increasing an amount of tension in said resonating element to increase a resonant frequency of the resonant element in a way that decreases an effect of simulated audio on the resonating element" as claimed. Rather, Quaas does not tension the resonating element to increase the resonant frequency. Quaas' system simply does not adjust the resonant frequency that is formed by the connection of the two elements.

The rejection refers to figure 2a as showing increasing the tightness of the tunable damping element. Again, however, the description of figure 2a column 5 lines 12-27 simply states that the length of the unit is adjustable. It does not teach or suggest anything other than connecting the two sound converters together using this adjustable length. Quaas teaches nothing about using this to change a resonant frequency of the structure.

Claim 1 requires that an amount of tension in the resonating element is increased to increase a resonant frequency of the resonating element. As described above, this is not in

any way taught or suggested by Quaas. Therefore, it is respectfully suggested that claim 1 is not taught or suggested by Quaas. In fact, Quaas teaches a completely different system than claim 1. Rather than increasing tension to increase resonant frequency as claimed, Quaas simply forms a system that has an inherent frequency. Therefore, claim 1 should be allowable along with the claims which depend therefrom.

Claim 2 specifies a rod which is tightened to increase the resonant frequency. Nothing in the cited prior art teaches or suggests this feature. Therefore, claim 2 should be further allowable thereover.

Claim 8 specifies that the frequency that is related to characteristics of the sound damping material. Again Quaas never teaches or suggests any resonant frequency matching material whatsoever. Therefore, claim 2 should be further allowable thereover.

Claim 10 again specifies tuning a resonant frequency, which again is not taught or suggested by Quaas. Therefore, claim 10 should be allowable along with the claims which depend therefrom.

Claims 11-13 depend from claim 10 and each define additional aspects which are further patentable as described above.

Claim 14 again enables a tunable system between opposing surfaces, and this is not taught or suggested by Quaas. Therefore, claim 14 should be allowable along with the claims which depend therefrom.

Claim 20 specifies tuning a resonant frequency of the mechanical structure to a value within an optimum range for the sound damping material. As described above, this is in no way taught or suggested by the cited prior art which does not teach this kind of tuning.

Claim 4 is alternately rejected as being obvious over Quaas. However, it is respectfully suggested that nothing in Quaas teaches or suggests how his system could be applied to an automobile. The rejection of claim 4 is entirely based on hindsight, since nothing teaches or suggests any way in which this system could be used in an automobile.

In view of the above, all of the claims should be in condition for allowance. A formal notice to that effect is respectfully solicited.

Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 12/17/02

Scott C. Harris
Reg. No. 32,030

Fish & Richardson P.C.
Customer Number: 20985
4350 La Jolla Village Drive, Suite 500
San Diego, California 92122
Telephone: (858) 678-5070
Facsimile: (858) 678-5099

10238306.doc

Attached is a marked-up version of the changes being made by the current amendment.

Version with markings to show changes made

In the claims:

Please amend the claims as follows:

1. (Amended) A method, comprising:

attaching a tunable damping element to a resonating element; and

increasing an amount of tension in said resonating element to increase a resonant frequency of the resonating element in a way that decreases an effect of stimulated audio on the [resonant] resonating element.

2. A method as in claim 1, wherein said tunable damping element includes a rod which is connected to said resonating element, and wherein said increasing includes tightening said tunable damping element, to increase an amount of tension in said resonating element.

3. A method as in claim 1, wherein said resonating element includes a cabinet with facing surfaces, and said rod extends between said facing surfaces to tension said alternating surfaces relative to one another.

4. A method as in claim 1, wherein said resonating element includes an automobile.

5. A method as in claim 1, wherein said resonating element includes a speaker enclosure.

6. A method as in claim 2, wherein said tightening comprises providing a washer on the rod, and tightening the washer against a surface of the resonating element.

7. A method as in claim 6, further comprising coupling a sound damping material to said washer.

8. A method as in claim 7, wherein said increasing comprises tuning the resonating element to a frequency related to characteristics of the sound damping material.

9. A method as in claim 8, wherein said characteristics include a maximum frequency of maximum sound absorption of the sound damping material.

10. A method comprising:

forming an audio enclosure which produces audio frequencies at a specified frequency; and

tuning a resonant frequency to increase a resonant frequency of the enclosure to a level outside of a bandwidth of the audio frequencies.

11. A method as in claim 10, wherein said resonant frequency tuning comprises using a variable tension device to increase a tension of said audio enclosure.

12. A method as in claim 11 wherein said variable tension device comprises a rod with threads, which is selectively tightened to increase a tension.

13. A method as in claim 12, further comprising attaching a sound damping material to the enclosure, and wherein said tuning comprises tuning the enclosure to an optimum frequency of said sound damping material.

14. (Amended) A device comprising:

a mechanical structure having opposing surfaces; and

Received from < 8586785099 > at 12/17/02 7:32:16 PM [Eastern Standard Time]

a resonant frequency tuning element coupled between said opposing surfaces and selectively tunable to change a resonant frequency of said mechanical structure.

15. A device as in claim 14, wherein said resonant frequency tuning element is coupled in a way to increase said resonant frequency of said mechanical structure.

16. A device as in claim 14, wherein said resonant frequency tuning element includes a threaded rod with screw threads thereon, and at least one nut which is tightened to increase a tension between said opposing surfaces of said mechanical structure.

17. A device as in claim 16, wherein said resonant frequency tuning element further includes at least one washer, which is pressed against said surfaces of said mechanical structure.

18. A device as in claim 14, further comprising a sound damping material, coupled to said resonant frequency tuning element.

19. A device as in claim 18, wherein said sound damping material is a constrained layer damping material.

20. A method comprising:

providing a sound damping material on mechanical structure, having opposing surfaces, coupled to at least one of said opposing surfaces, and operating to damp at least part of an effect of sound on said mechanical structure; and

tuning a resonant frequency of said material structure, to a value which is within an optimum range for said sound damping material.

21. A method as in claim 20, wherein said sound damping material is a constrained layer damping material.

22. A method as in claim 20, wherein said tuning comprises increasing a tension between said opposing surfaces to increase a resonant frequency of said structure.